

WHAT IS CLAIMED IS:

1. A protein supplemented food product formed by a process comprising cooking a premix to form a cooked dough; wherein the premix includes a starch-containing material and a modified oilseed material; and the modified oilseed material includes at least about 85 wt.% (dsb) protein; at least about 40 wt.% of the protein has an apparent molecular weight of greater than 300 kDa; and at least about 40 wt.% of the protein in a 50 mg sample of the modified oilseed material is soluble in 1.0 mL water at 25° C.
2. The food product of claim 1 wherein the premix includes at least about 20 wt.% (dsb) protein and at least about 10 wt.% (dsb) carbohydrate.
3. The food product of claim 2 wherein the premix includes about 40 to 70 wt.% (dsb) protein and at least about 20 wt.% (dsb) carbohydrate.
4. The food product of claim 1 wherein the modified oilseed material is a soy protein isolate; and the premix includes at least about 20 wt.% of the soy protein and at least about 10 wt.% of the starch-containing material.
5. The food product of claim 4 wherein the modified oilseed material is a soy protein isolate; and the premix includes about 40 to 70 wt.% of the soy protein isolate and about 20 to 60 wt.% of the starch-containing material.
6. The food product of claim 1 wherein the starch-containing material is derived from rice, corn, soybeans, sunflower, canola, wheat, oats, rye, potato, cassava or a mixture thereof.

7. The food product of claim 1 wherein the starch-containing material includes rice flour, wheat flour, rye flour, soy flour, soy meal, oat flour, oat meal, corn starch, corn meal, potato flour, potato starch, tapioca flour, tapioca starch, or a mixture thereof.

8. The food product of claim 1 wherein the starch-containing material includes farinaceous material which includes wheat flour, rye flour, oat flour, oat meal or a mixture thereof.

9. The food product of claim 1 wherein the starch-containing material includes a plant-by-product meal.

10. The food product of claim 1 wherein the cooked dough has a density of about 75 to 175 g/L; at least about 20 wt.% (dsb) protein and a moisture content of about 3 to 6 wt.% .

11. The food product of claim 1 wherein the starch-containing material includes a farinaceous material.

12. The food product of claim 1 wherein the cooked dough has a density of about 50 to 200 g/L and a moisture content of about 2 to 8 wt.%.

13. The food product of claim 1 wherein a 13.5% aqueous solution of the modified oilseed material forms a gel having a breaking strength of no more than about 25g.

14. The food product of claim 1 wherein the modified oilseed material includes at least about 1.4 wt.% cysteine as a percentage of total protein.

15. The food product of claim 1 wherein the modified oilseed material has a ratio of sodium ions to a total amount of sodium, calcium and potassium ions of no more than about 0.5.

16. The food product of claim 1 wherein the modified oilseed material includes no more than about 7000 mg/kg (dsb) sodium ions.

17. The food product of claim 1 wherein the modified oilseed material has a viscosity slope of at least about 20 cP/min.

18. The food product of claim 1 wherein the modified oilseed material has a melting temperature of at least about 87°C and a bacteria load of no more than about 50,000 cfu/g.

19. The food product of claim 1 wherein the modified oilseed material has an MW₅₀ of at least about 400 kDa.

20. The food product of claim 1 wherein the modified oilseed material has a dry Gardner L value of at least about 85.

21. The food product of claim 1 wherein the modified oilseed material has an EOR of no more than about 0.75 mL.

22. The food product of claim 1 wherein the modified oilseed material comprises modified soybean material including at least about 90 wt. % (dsb) protein.

23. The food product of claim 1 wherein the modified oilseed material has a substantially bland taste.

24. The food product of claim 1 wherein the modified oilseed material is a soy protein isolate; and the premix includes about 40 to 75 wt. % of the soy protein isolate.

25. The food product of claim 24 wherein the starch-containing material includes rice flour; and the premix includes about 20 to 60 wt.% rice flour.

26. The food product of claim 1 wherein the modified oilseed material has a flavor component content including no more than about 500 ppb benzaldehyde; no more than about 2500 ppb 2-pentyl furan; no more than about 600 ppb 2-heptanone; and no more than about 250 ppb E,E-2,4-decadienal.

27. A method of forming a protein supplemented food product comprising:

cooking a premix to form a cooked dough;

wherein the premix includes a starch-containing material and a modified oilseed material; and the modified oilseed material includes at least about 85 wt.% (dsb) protein; at least about 40 wt.% of the protein has an apparent molecular weight of greater than 300 kDa; and at least about 40 wt.% of the protein in a 50 mg sample of the modified oilseed material is soluble in 1.0 mL water at 25° C.

28. The method of claim 27 wherein cooking the premix comprises extruding the premix through a heated extruder barrel.

29. The method of claim 28 wherein the heated extruder barrel is at a temperature of about 75 to 95° C.

30. The method of claim 27 further comprising drying the cooked dough.

31. The method of claim 27 further comprising forming the cooked dough into shaped pieces.

32. The method of claim 31 further comprising drying the shaped pieces to a moisture content of about 2 to 8 wt.%.

33. A method for forming a protein supplemented food product comprising:

extracting oilseed material with an aqueous solution to form a suspension of particulate matter in an oilseed extract;

passing the extract through a filtration system including a microporous membrane to produce a permeate and a protein-enriched retentate, wherein the microporous membrane has a filtering surface with a contact angle of no more than 30 degrees;

drying the protein-enriched retentate to provide a dried retentate;

blending the dried retentate with a starch-containing material to form a premix; and

cooking the premix to form a cooked dough.

34. A food composition comprising cooked dough; wherein the cooked dough is formed by a process which comprises cooking a premix which includes a modified oilseed material and a starch-containing material to form a cooked; and the modified oilseed material comprises at least 85 wt.% protein on a dry solids basis; at least about 40 wt.% of the protein has an apparent molecular weight of at least 300 kDa; and at least 40 wt.% of the protein in a 50 mg sample of the modified oilseed material is soluble in 1.0 mL water at 25°C.

35. The food composition of claim 34 wherein said food composition is a ready-to-eat cereal, a snack food or a frozen dessert composition.

36. The food composition of claim 34 wherein said food composition is a confectionery composition.

37. The food composition of claim 34 comprising pieces of the cooked dough.

38. The food composition of claim 37 wherein the cooked dough pieces have a density of about 50 to 200 g/L and include at least about 20 wt.% (dsb) protein.

39. The food composition of claim 34 wherein the premix further comprises bran material.

40. The food composition of claim 34 wherein the premix further comprises sweetener.

41. The food composition of claim 34 wherein the modified oilseed material has a flavor component content which includes no more than about 500 ppb benzaldehyde; no more than about 600 ppb 2-heptanone; and no more than about 250 ppb E,E-2,4-decadienal.

42. The food composition of claim 34 wherein the premix further comprises one or more ingredients selected from the group consisting of vitamins, minerals, salt, flavors, flavor enhancers.